IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application : **10/014,192**

Applicant(s) : **GUTTA et al.**

Filed : **11/13/2001**

Confirmation : **3013**

T.C./Art Unit : **2623**

Examiner : **USTARIS, Joseph G.**

Atty. Docket : **US-010569**

Title: **METHOD AND APPARATUS FOR GENERATING A STEREOTYPICAL PROFILE FOR RECOMMENDING ITEMS OF INTEREST USING ITEM-BASED CLUSTERING**

Mail Stop: **APPEAL BRIEF - PATENTS**
Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL UNDER 37 CFR 41.37

Sir:

This is an appeal from the decision of the Examiner dated 2 March 2007, finally rejecting claims 1, 3-9, 11-14, and 16-23 of the subject application.

This paper includes (each beginning on a separate sheet):

1. **Appeal Brief;**
2. **Claims Appendix;**
3. **Evidence Appendix; and**
4. **Related Proceedings Appendix.**

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The above-identified application is assigned, in its entirety, to **Koninklijke Philips Electronics N. V.**

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 2, 10, and 15 are canceled.

Claims 1, 3-9, 11-13, and 16-23 are pending in the application.

Claims 1, 3-9, 11-13, and 16-23 stand rejected by the Examiner under 35 U.S.C. 101.

Claims 1, 3-7, 9, 11-12, 14, 16-17, and 19-23 stand rejected by the Examiner under 35 U.S.C. 102(b).

Claims 8, 13, and 18 stand rejected by the Examiner under 35 U.S.C. 103(a).

These rejected claims are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection in the Office Action dated 2 March 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Many systems are available for providing recommendations to a user based on the user's preferences as well as the preferences of groups of users who exhibit similar preferences as the user. Such systems include, for example, product recommendations based on the purchase history of users, program recommendations based on the viewing history of users, and so on (Applicants' page 3, lines 9-22). In such systems, a need exists for characterizing the preferences of groups, so that the user can initially identify which group(s) appear to exhibit similar preferences (page 3, lines 7-12).

This invention addresses the identification and selection of stereotypical profiles that reflect the typical patterns of items selected by representative users, to facilitate establishing a correspondence between the user's preferences and select group(s) of other users' preferences (page 3, lines 15-29). Each stereotype profile corresponds to a cluster of items that are similar to one another in some way (page 3, lines 23-25). In an example embodiment for program recommendations, the viewing history of third party users is analyzed to identify clusters of programs exhibiting similar characteristics; from within each cluster a representative program is selected as the stereotypical program, based on an intra-cluster variance resulting from this selection (page 3, line 30 – page 4, line 10).

Independent claim 1 recites a method (FIG. 5) for identifying one or more mean items for a plurality of items, J, each of the items having a symbolic value of a symbolic attribute (page 13, lines 5-20), the method comprising:

computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items (520; page 13, lines 15-26); and

selecting at least one mean item that has the symbolic value that minimizes the variance (530; page 13, lines 26-27).

Dependent claim 8 recites the method of claim 1, wherein computing the variance includes:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ, (page 13, Equation 1)

where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, (520; page 13, lines 15-26) and

selecting the at least one mean item that provides a minimum value of Var (J) (530; page 13, lines 26-27).

Independent claim 9 recites a method for characterizing a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value, the method comprising:

computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items (520; page 13, lines 15-26); and

selecting the symbolic value of at least one item that minimizes the variance as a mean symbolic value that characterizes the symbolic attribute of the plurality of items (page 3, lines 23-27; 530; page 13, lines 26-27).

Dependent claim 13 recites the method of claim 9, wherein computing a variance includes:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ, (page 13, Equation 1)

where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, (520; page 13, lines 15-26) and

selecting the value x_μ of at least one item that provides a minimum value of Var (J) (530; page 13, lines 26-27).

Independent claim 14 recites a system (FIG. 1) for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value (page 13, lines 5-20), the system comprising:

a memory (120; page 7, line 8) for storing computer readable code (300-800; page 7, lines 26-31); and

a processor (115; page 7, lines 7-8) operatively coupled to the memory, the processor configured to:

compute a variance of the symbolic values of the plurality of items relative to each of the items (500 in FIG. 1; 520 in FIG. 5; page 13, lines 15-26); and

select the at least one mean item having a symbolic value that minimizes the variance (500 in FIG. 1; 530 in FIG. 5; page 13, lines 26-27).

Dependent claim 18 recites the system of claim 14, wherein the processor is configured to compute the variance by:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item , μ, (page 13, Equation 1)

where J is a cluster of items from a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, (520; page 13, lines 15-26) and

selecting the at least one mean item that has symbolic value x_μ that minimizes the Var (J) (530; page 13, lines 26-27).

Independent claim 19 recites an article of manufacture for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value (page 24, lines 28-31), comprising:

a computer readable medium having computer readable code embodied thereon (page 25, lines 1-2), the computer readable program code comprising:

a step to compute a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items (500 in FIG. 1; 520 in FIG. 5; page 13, lines 15-26); and

a step to select at least one item that has the symbolic value that minimizes the variance (500 in FIG. 1; 530 in FIG. 5; page 13, lines 26-27).

Independent claim 20 recites a system (FIG. 1) for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value (page 13, lines 5-20), the system comprising:

means for computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items (500 in FIG. 1; 520 in FIG. 5; page 13, lines 15-26); and

means for selecting at least one item that has the symbolic value that minimizes the variance (530; page 13, lines 26-27).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3-9, 11-14, and 16-23 stand rejected under 35 U.S.C. 101.

Claims 1, 3-7, 9, 11-12, 14, 16-17, and 19-23 stand rejected under 35 U.S.C. 102(b) over Chislenko et al. (USP 6,041,311, hereinafter Chislenko).

Claims 8, 13, and 18 stand rejected under 35 U.S.C. 103(a) over Chislenko and Keyes et al. (USP 7,003,484, hereinafter Keyes).

VII. ARGUMENT

Claims 1, 3-9, 11-14, and 16-23 stand rejected under 35 U.S.C. 101

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. 101.

MPEP 2106 states:

"Office personnel have the burden to establish a *prima facie* case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. ***Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101.***

This perspective has been embraced by the Federal Circuit:

"The plain and unambiguous meaning of section 101 is that ***any new and useful process***, machine, manufacture, or composition of matter, or any new and useful improvement thereof, ***may be patented*** if it meets the requirements for patentability set forth in Title 35, such as those found in sections 102, 103, and 112. The use of the expansive term "any" in section 101 represents Congress's intent not to place any restrictions on the subject matter for which a patent may be obtained beyond those specifically recited in section 101 and the other parts of Title 35. . . . Thus, **it is improper to read into section 101 limitations as to the subject matter that may be patented where the legislative history does not indicate that Congress clearly intended such limitations.** *Alappat*, 33 F.3d at 1542, 31 USPQ2d at 1556.

Claims 1, 3-9, 11-14, and 16-23

The Office action asserts that the claims are "rejected as being non-statutory as preempting a law of nature" (Office action, page 3, lines 5-6). The applicants respectfully disagree with this assertion. Claim 1, for example, recites computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items and selecting at least one mean item that has the symbolic value that minimizes the variance. Claims 9, 14, 19, and 20 include similar elements. These elements are not laws of nature; there is nothing 'natural' about computing a variance, and nothing in nature provides for a selection of an item that has a symbolic value that minimizes such a variance.

The Office action acknowledges that claims 1, 9, 14, 19, and 20 appear to recite a practical application of a mathematical algorithm (Office action, page 3, lines 2-4), but asserts that the scope of claims include "'every substantial practical application' of the claimed law of nature" (Office action, page 3, lines 7-8). The applicants respectfully disagree with this assertion. The claims are directed to a method and system for characterizing a group of items based on characteristics of the individual items. Each of the independent claims includes specific limitations for characterizing the group, including computing an intra-group variance relative to a symbolic value of each item in the group, and identifying a stereotypical member (mean item) of the group based on the intra-group variance associated with each member, and thus cannot be said to cover every substantial application for characterizing a group of items based on characteristics of the individual items. As such, the applicants respectfully maintain that the rejection of claims 1, 3-9, 11-14, and 16-20 under 35 U.S.C. 101 is unfounded, and should be reversed by the Board.

Claim 19

The Office action also asserts that claim 19 is directed to a disembodied computer program (Office action, page 3, lines 11-13). The applicants respectfully disagree with this assertion. Claim 19 clearly claims an article of manufacture that includes a computer program that is embodied on a computer readable medium, and thus cannot be said to be directed to a disembodied computer program. Accordingly, the applicants respectfully maintain that the rejection of claim 19 under 35 U.S.C. 101 is unfounded, and should be reversed by the Board.

Claims 1, 3-7, 9, 11-12, 14, 16-17, and 19-23 stand rejected under 35 U.S.C. 102(b) over Chislenko

MPEP 2131 states:

"A claim is anticipated only if ***each and every element*** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The ***identical invention*** must be shown in as ***complete detail*** as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 1, 3-7, and 21-22

Claim 1, upon which claims 3-8 and 21-22 depend, claims a method that includes computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items and selecting at least one mean item that has a symbolic value that minimizes the variance.

Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items.

Chislenko fails to teach selecting at least one mean item that has a symbolic value that minimizes the variance.

The Board of Patent Appeals and Interferences has consistently upheld the principle that the burden of establishing a prima facie case resides with the Office, and to meet this burden, the Examiner must specifically identify where each of the claimed elements are found in the prior art:

"there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991)." *Ex Parte Naoya Isoda*, Appeal No. 2005-2289, Application 10/064,508 (BPAI Opinion October 2005).

The Office action asserts that Chislenko teaches computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items at column 10, lines 58-64. The applicants respectfully disagree with this assertion, and note that, as the Office action acknowledges Chislenko specifically teaches determining a variance relative to the group centroid, and not relative to the value of each item:

> "After calculating the group centroids, determine to which group centroid each item is closest, and move it to that group. Whenever an item is moved in this manner, recalculate the centroids for the affected groups. Iterate until the distance between all group centroids and items assigned to each group are below a predetermined threshold or until a certain number of iterations have been accomplished." (Chislenko, column 10, lines 58-64)

One of skill in the art would not consider determining a distance (variance) between each item in the group and a centroid of the group to be identical to determining a variance between each item in the group and each other item in the group, as specifically claimed in claim 1.

Further, the Office action asserts that Chislenko teaches selecting at least one mean item that has a symbolic value that minimizes the variance of symbolic values of a plurality of items relative to the symbolic value of each of the items at column 10, lines 32-64. The applicants respectfully disagree with this assertion.

At the cited text, Chislenko teaches conventional 'clustering': organizing items into groups, such as 'rock', 'pop', and so on. Chislenko does not teach selecting an item from within a group based on the variance of the items in the group relative to the value of the selected item.

The Office action asserts that Chislenko selects "the item [that] best represents the groups average rating, for example "POP" music rating", but provides no basis for this assertion. The Office action also asserts that this selected item's "rating matches the group centroid when there is minimum difference/variance from the group centroid", but also provides no basis for this assertion. Chislenko teaches determining the distances of each item relative to the group centroid in order to assure that all the items are within a given radius (threshold) of the centroid, but does

not teach using any of these distances to select a representative item in the group, and does not teach selecting the item having a minimum distance from the group centroid as a representative item, as asserted in the Office action.

Because Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items, and because Chislenko fails to teach selecting at least one mean item that has a symbolic value that minimizes the variance, as specifically claimed in claim 1, the applicants respectfully maintain that the rejection of claims 1, 3-7, and 21-22 under 35 U.S.C. 102(b) over Chislenko is unfounded, per MPEP 2131, and should be reversed by the Board.

Claims 9, 11-12, and 23

Claim 9, upon which claims 11-13 and 23 depend, claims a method that includes computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items and selecting the symbolic value of at least one item that minimizes the variance as a mean symbolic value that characterizes the symbolic attribute of the plurality of items.

As noted above, Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items.

Further, Chislenko fails to teach selecting the symbolic value of at least one item that minimizes the variance as a mean symbolic value that characterizes the symbolic attribute of the plurality of items. Chislenko teaches a conventional clustering technique that identifies a centroid of groups of items. As noted above, Chislenko does not teach selecting an item that is closest to the centroid, as asserted in the Office action, and specifically, Chislenko does not teach selecting a value of an item in the group as the symbolic value that characterizes the symbolic attribute of the group, as specifically claimed in claim 9.

Because Chislenko fails to teach each of the elements of claim 9, the applicants respectfully maintain that the rejection of claims 9, 11-12, and 23 under 35 U.S.C. 102(b) over Chislenko is unfounded, per MPEP 2131, and should be reversed by the Board.

Claims 14 and 16-17

Claim 14, upon which claims 16-18 depend, claims a system that includes a processor that is configured to compute a variance of the symbolic values of the plurality of items relative to each of the items and select at least one mean item having a symbolic value that minimizes the variance.

As noted above, Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to each of the items, and fails to teach selecting at least one mean item having a symbolic value that minimizes the variance, as specifically claimed in claim 14. Accordingly, the applicants respectfully maintain that the rejection of claims 14 and 16-17 under 35 U.S.C. 102(b) over Chislenko is unfounded, per MPEP 2131, and should be reversed by the Board.

Claim 19

Claim 19 claims an article of manufacture that includes a computer readable medium having computer readable code embodied thereon, the computer readable program code including a step to compute a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items and a step to select at least one item that has the symbolic value that minimizes the variance.

As noted above, Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to each of the items, and fails to teach selecting at least one mean item having a symbolic value that minimizes the variance, as specifically claimed in claim 19. Accordingly, the applicants respectfully maintain that the rejection of claim 19 under 35 U.S.C. 102(b) over Chislenko is unfounded, per MPEP 2131, and should be reversed by the Board.

Claim 20

Claim 20 claims a system that includes means for computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items and means for selecting at least one item that has the symbolic value that minimizes the variance.

As noted above, Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to each of the items, and fails to teach selecting at least one mean item having a symbolic value that minimizes the variance, as specifically claimed in claim 20. Accordingly, the applicants respectfully maintain that the rejection of claim 20 under 35 U.S.C. 102(b) over Chislenko is unfounded, per MPEP 2131, and should be reversed by the Board.

Claims 8, 13, and 18 stand rejected under 35 U.S.C. 103(a) over Chislenko and Keyes

MPEP 2142 states:

> "To establish a *prima facie* case of obviousness … the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***… If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

Claims 8, 13, and 18

Claims 8, 13, and 18, are dependent upon independent claims 1, 9, and 14, and include determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ, where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ.

In this rejection, the Office action relies on Chislenko for teaching the elements of claims 1, 9, and 14. As noted above, Chislenko fails to teach each of the elements of claims 1, 9, and 14, and thus the applicants respectfully maintain that the rejection of claims 1, 9, and 14 under 35 U.S.C. 103(a) that relies on Chislenko for this teaching is unfounded, per MPEP 2142.

Additionally, neither Chislenko nor Keyes teaches or suggests determining Var $(J) = \sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ. As noted above, the applicants teach and claim computing a variance of symbolic values of a plurality of items ***relative to each of the items***, that is, relative to $\mathbf{x_\mu}$ in the above equation. Both Chislenko and Keyes teach the conventional determination of variance ***relative to the centroid*** of the group of items.

The Office action references Keyes column 22, lines 15-37 for teaching "a function identical to Var $(J) = \sum_{i \in J} (x_i - x_\mu)^2$ ", and asserts that Keyes' variable "V_i is the symbolic value of each item, μ" (Office action, page 8, lines 7-10). The applicants respectfully note that this assertion is false. Keyes specifically refers to variable X as corresponding to the value of the data items, and the variable V as corresponding to the value of the centroid of the group:

> " $J = \sum_{k=1..n} \sum_{i=1..c} \mu_{ik} \|X_k - V_i\|^2$ (Equation F)
>
> where n is the number of data points; c is the number of clusters, X_k is the k^{th} data point; **V_i is the i^{th} cluster centroid"** (Keyes, column 22, lines 15-26, emphasis added).

Because the combination of Chislenko and Keyes fails to teach or suggest each of the elements of claims 8, 13, and 18, the applicants respectfully maintain that the rejection of claims 8, 13, and 18 under 35 U.S.C. 103(a) over Chislenko and Keyes is unfounded, per MPEP 2142, and should be reversed by the Board.

CONCLUSIONS

Because the applicants have invented a new and useful process, system, and article of manufacture, and because each of the claims recite a practical application of the technical arts, the applicants respectfully request that the Examiner's rejection of claims 1, 3-9, 11-14, and 16-23 under 35 U.S.C. 10 be reversed by the Board, and the claims be allowed to pass to issue.

Because Chislenko fails to teach computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items, and fails to teach selecting at least one mean item that has a symbolic value that minimizes the variance, the applicants respectfully request that the Examiner's rejection of claims 1, 3-7, 9, 11-12, 14, 16-17, and 19-23 under 35 U.S.C. 102(b) over Chislenko be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Chislenko and Keyes fails to teach computing a variance of symbolic values of a plurality of items relative to the symbolic value of each of the items, fails to teach selecting at least one mean item that has a symbolic value that minimizes the variance, and fails to teach determining $Var(J) = \sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ, where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, the applicants respectfully request that the Examiner's rejection of claims 8, 13, and 18 under 35 U.S.C. 103(a) over Chislenko and Keyes be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted

/Robert M. McDermott/
Robert M. McDermott, Esq.
Registration Number 41,508
804-493-0707

Please direct all correspondence to:
Yan Glickberg, Esq.
Philips Intellectual Property and Standards
P.O. Box 3001
Briarcliff Manor, NY 10510-8001
914-333-9618

CLAIMS APPENDIX

1. A method for identifying one or more mean items for a plurality of items, J, each of the items having a symbolic value of a symbolic attribute, the method comprising:

computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items; and

selecting at least one mean item that has the symbolic value that minimizes the variance.

2. (Canceled)

3. The method of claim 1, including assigning a label to the plurality of items using the symbolic value of the selected mean item.

4. The method of claim 1, wherein the plurality of items are a cluster of similar items.

5. The method of claim 1, wherein the items are programs.

6. The method of claim 1, wherein the items are content.

7. The method of claim 1, wherein the items are products.

8. The method of claim 1, wherein computing the variance includes:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ,

where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, and

selecting the at least one mean item that provides a minimum value of Var (J).

9. A method for characterizing a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value, the method comprising:

computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items; and

selecting the symbolic value of at least one item that minimizes the variance as a mean symbolic value that characterizes the symbolic attribute of the plurality of items.

10. (Canceled)

11. The method of claim 9, further comprising assigning a label to the plurality of items using the symbolic value of one of the at least one items that minimize the variance.

12. The method of claim 9, wherein the plurality of items are a cluster of similar items.

13. The method of claim 9, wherein computing a variance includes:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item, μ,

where J is a cluster of items of a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, and

selecting the value x_μ of at least one item that provides a minimum value of Var (J).

14. A system for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value, the system comprising:

a memory for storing computer readable code; and

a processor operatively coupled to the memory, the processor configured to:

compute a variance of the symbolic values of the plurality of items relative to each of the items; and

select the at least one mean item having a symbolic value that minimizes the variance.

15. (Canceled)

16. The system of claim 14, wherein the processor is further configured to assign a label to the plurality of items using at least one symbolic value from the selected at least one mean item.

17. The system of claim 14, wherein the plurality of items are a cluster of similar items.

18. The system of claim 14, wherein the processor is configured to compute the variance by:

determining Var (J) = $\sum_{i \in J} (x_i - x_\mu)^2$ for each item , μ,

where J is a cluster of items from a class, x_i is the symbolic value of each item, i, and x_μ is the symbolic value of each item, μ, and

selecting the at least one mean item that has symbolic value x_μ that minimizes the Var (J).

19. An article of manufacture for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value, comprising:

a computer readable medium having computer readable code embodied thereon, the computer readable program code comprising:

a step to compute a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items; and

a step to select at least one item that has the symbolic value that minimizes the variance.

20. A system for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute having a symbolic value, the system comprising:

means for computing a variance of the symbolic values of the plurality of items relative to the symbolic value of each of the items; and

means for selecting at least one item that has the symbolic value that minimizes the variance.

21. The method of claim 1, including:

computing a plurality of other variances of other symbolic values of a plurality of other symbolic attributes of the plurality of items relative to each other symbolic value of each of the items; and

selecting a plurality of other mean items, each other mean item having the other symbolic value that minimizes each other variance.

22. The method of claim 21, including

characterizing the plurality of items using the symbolic value of the at least one mean item and the other symbolic values of the plurality of other mean items.

23. The method of claim 9, including:

computing a plurality of other variances of other symbolic values of a plurality of other symbolic attributes of the plurality of items relative to each other symbolic value of each of the items; and

selecting a plurality of other symbolic values that minimize each other variance as a plurality of other mean symbolic values that characterize the plurality of other symbolic attributes of the plurality of items.

EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the appellant in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.